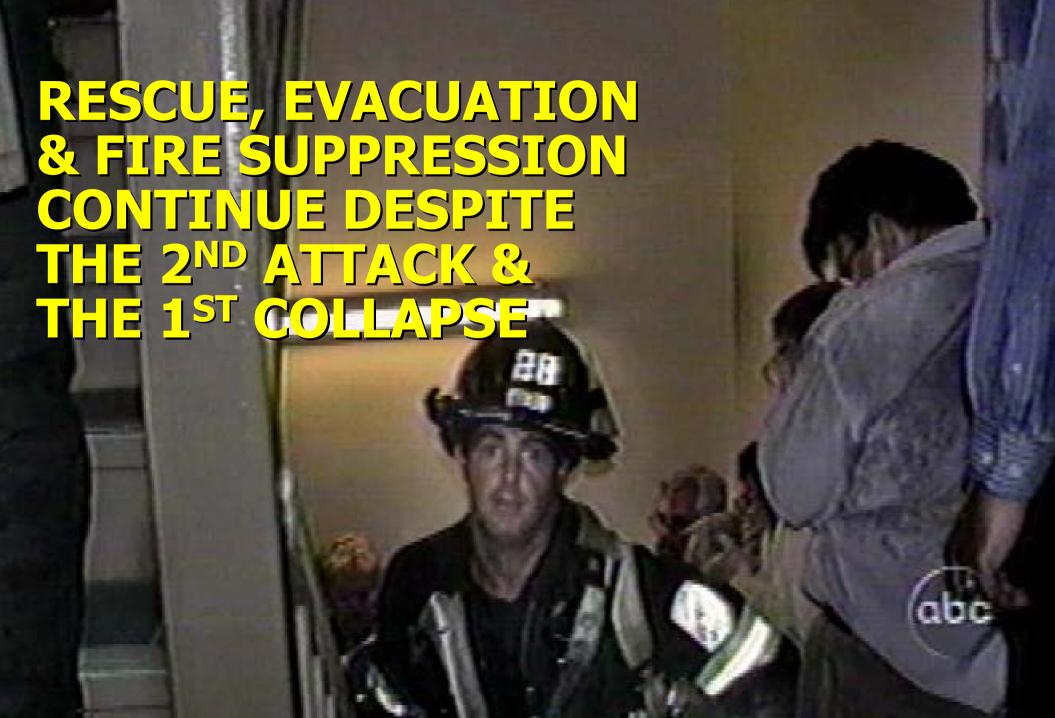
AMERICA UNDER ATTACK
The World Trade Center
9/11/01 Fire Box 5-5-8087

HEALTHCARE ISSUES:

Past, Present & Future

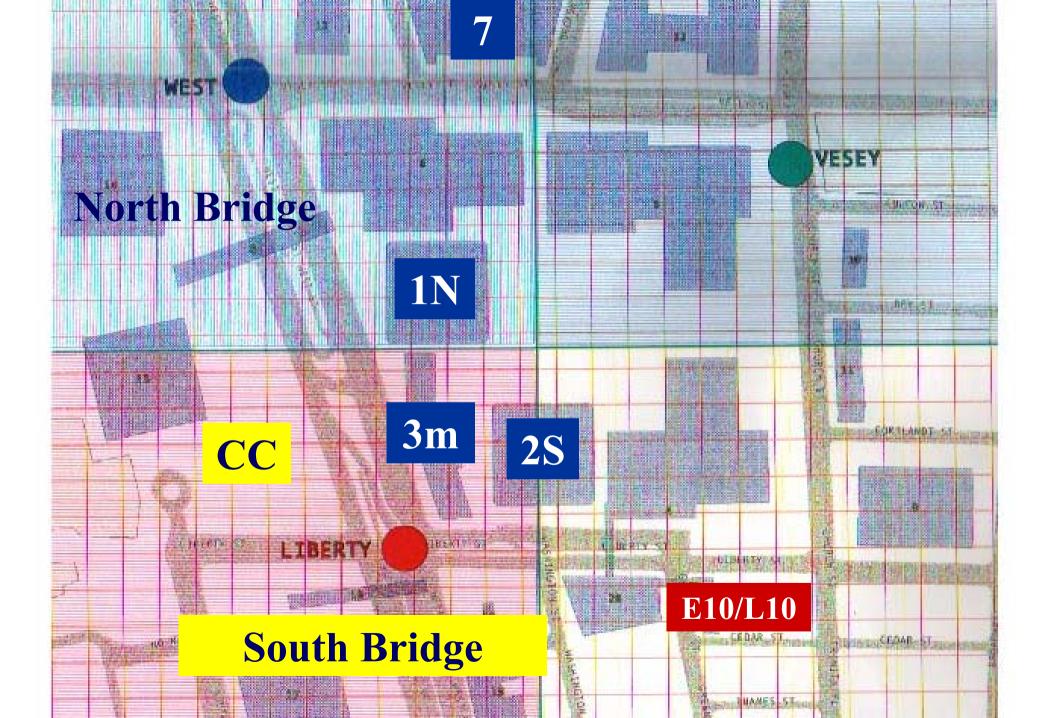












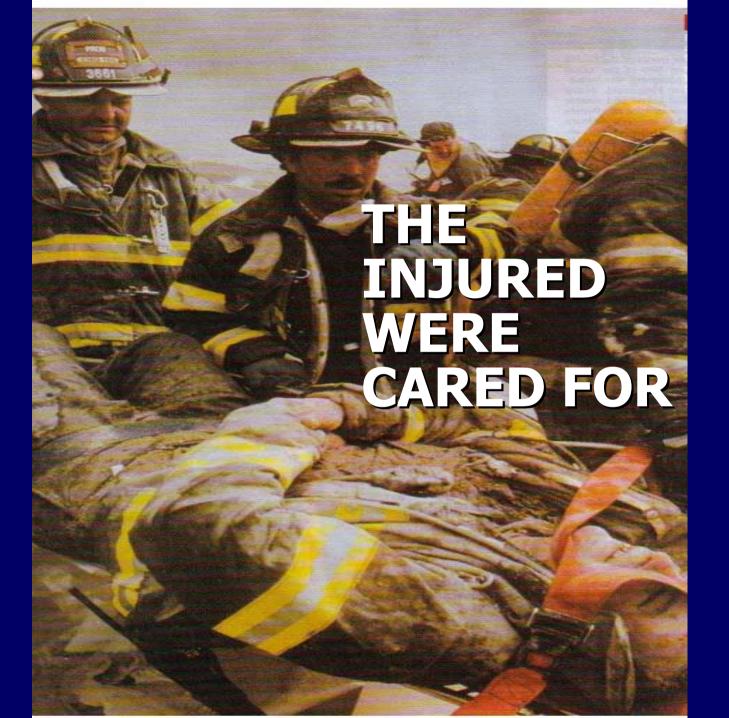


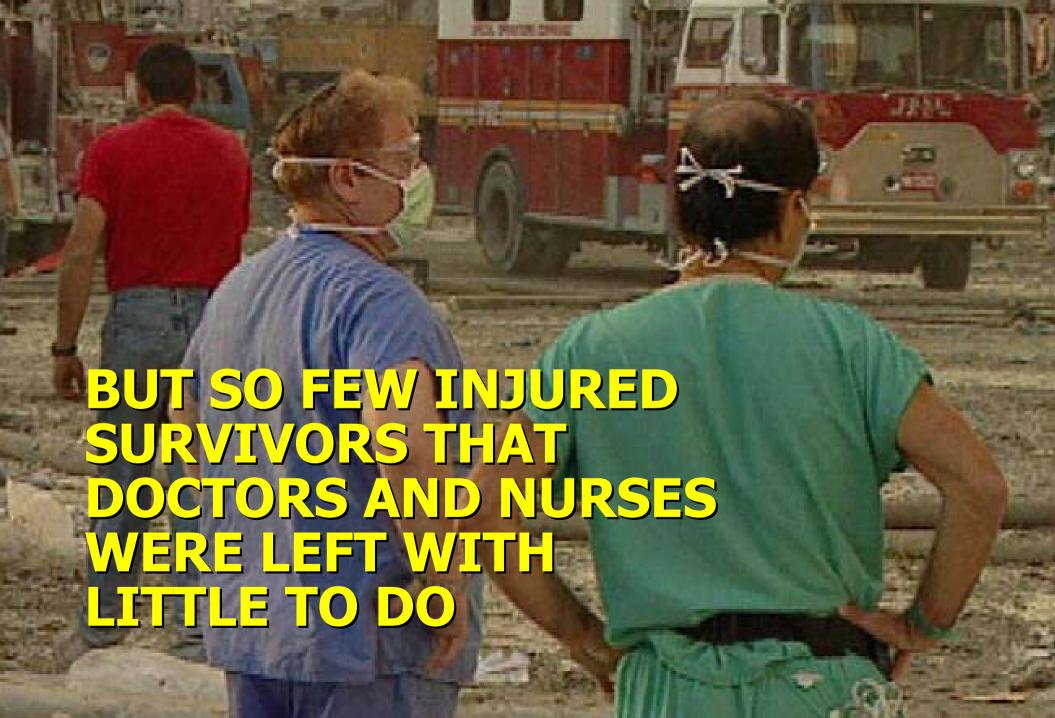


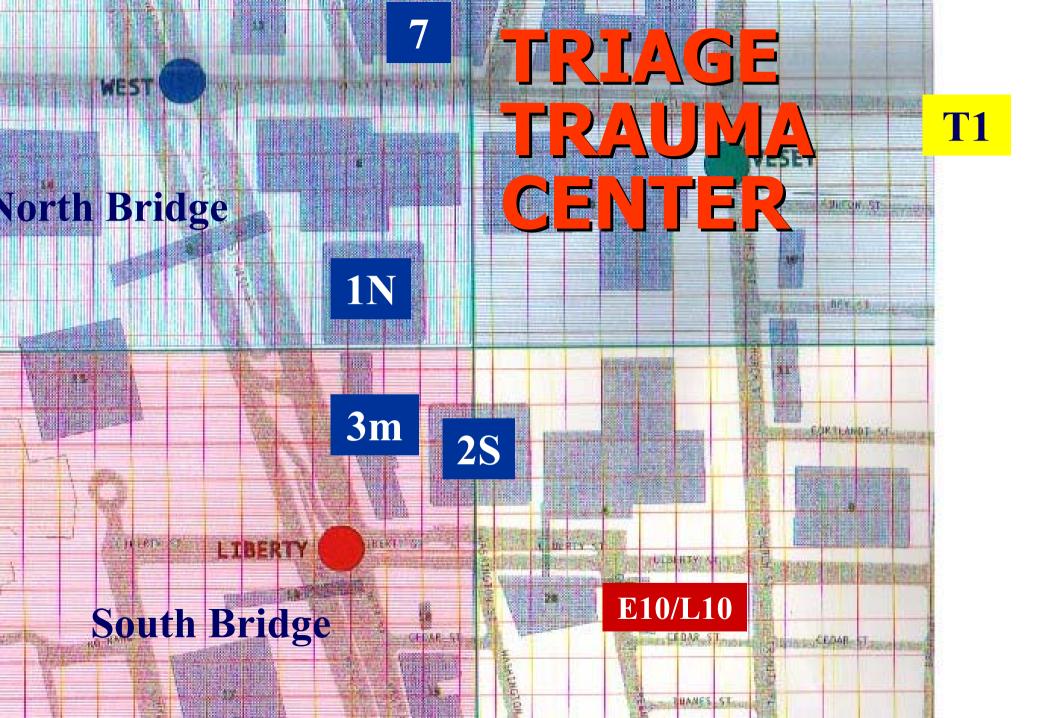


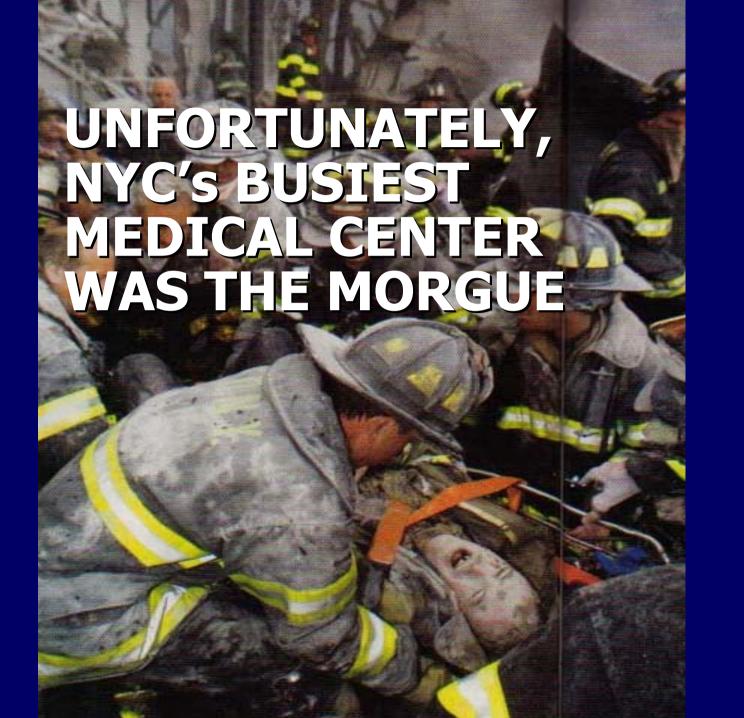






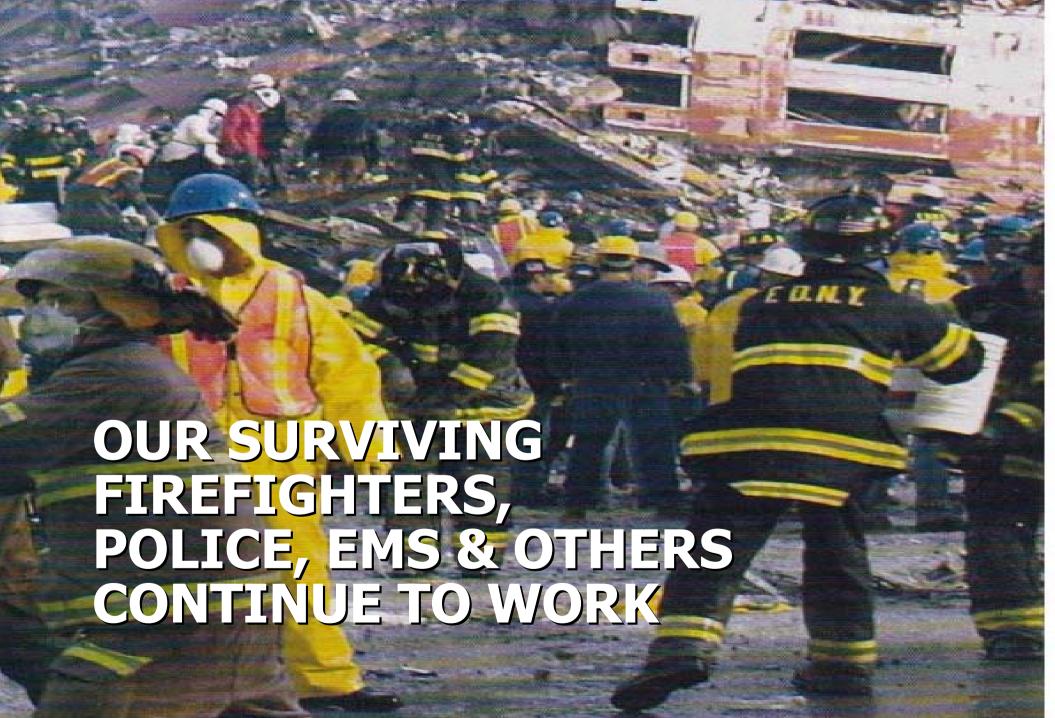




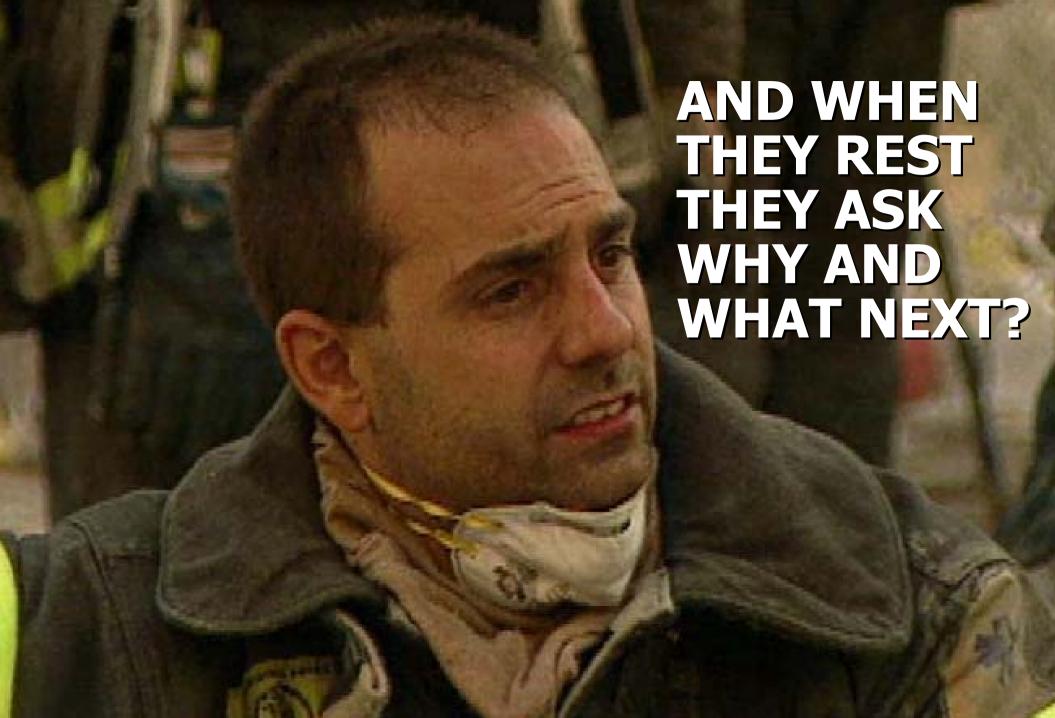


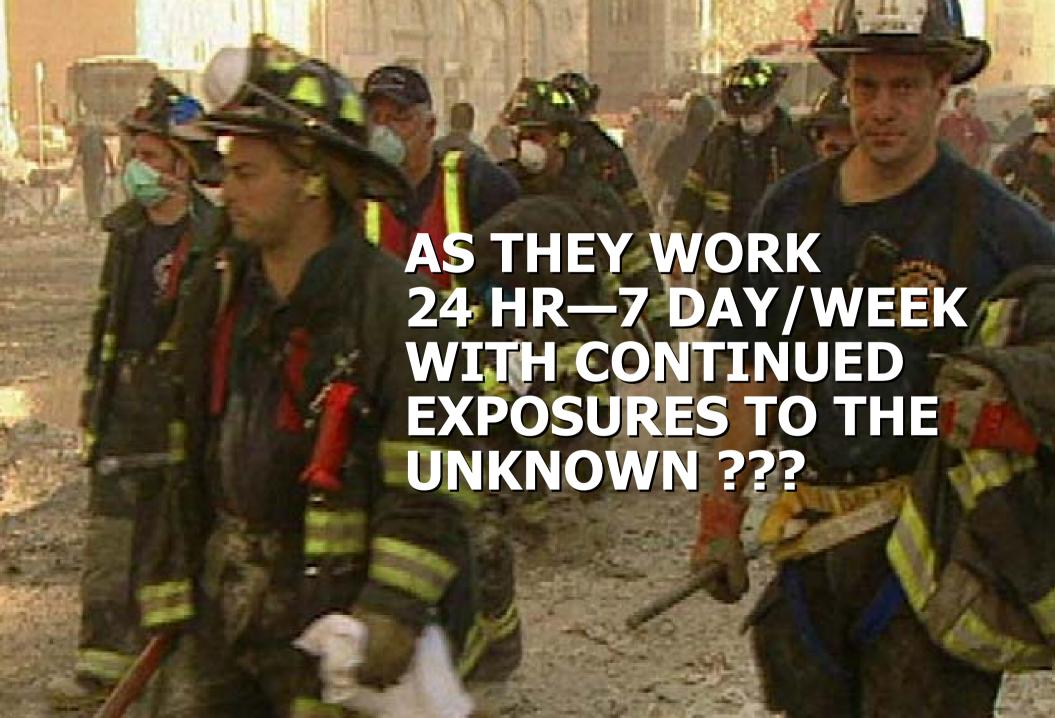












• WHILE WE ALL HAVE OBYTOUS CONCERNS
ABOUT FUTURE HEALTH RISKS FROM
POTENTIAL CARCINOGENS PRESENT AT
UNPROVEN CONCENTRATIONS



• WE MUST NOT NEGLECT THE CURRENT AND FUTURE HEALTH RISK FROM PARTICULATE MATTER PRESENT AT VISIBLY HIGH LEVELS





O MEDICAL COMPLATINGS

- o <u>la particulate matterissues</u>
 - EVERRICONE INDEDICATE
 - -EYE PPE OF ? VALUE
 - MYOCARDIAL INFARCTS ????
 - COUGH: DAYS TO WEEKS POST—EXPOSURE
 - 2. STRESS: IMMEDIATE & LONGTERM

GROUND ZERO

Firefighters battle 'Trade Center cough'



RESPIRATORY PROTECTION WHAT WENT WRONG?

- •RESPIRATORS: NONE & VARIED
 - DUE TO CONFUSION & DELAY IN SUPPLY
- •FDNY-BHS DEMANDS THE BEST
 - •HALF-FACE P100 RESPIRATOR WITH DUAL FILTERS FOR PARTICULATES & VAPOR
- COMPLIANCE IS POOR
 - •SUPPLY DELAYS, COMFORT, SUPERVISION, FIT TESTING?, TRAINING??

HALLMARK OF THE WTC EXPOSURE THE WTC COUGH

- PERSISTENT COUGH
- > SORE THROAT
- **>GI IRRITATION (GERD)**
- >TO LESSER EXTENT:
 - > CHEST IRRITATION
 - >INTERMITTENT WHEEZING
 - >SHORTNESS OF BREATH WITH EXERTION

WTC COUGH TREATMENT PROTOCOL:

- 1. EXAM, PFT, CXRAY
- 2. BHS DISTRIBUTED INHALED STEROID (PULMICORT) FOR 2 TO 4 WKS.
 - GIVEN TO ~4,000 OF ~11,000 FFS
- 3. IF NO RESPONSE, CONSIDER:
 - ANTIBIOTICS
 - COUGH SUPPRESSANT
 - NASAL DECONGESTANT
 - BRONCHODILATOR
 - GERD PROTOCOL

PREVENTION WHAT CAN THE FIREFIGHTER DO NOW?

- •RESPIRATOR USE
- **EVALUATE & TREAT**
 - IRRITANT/INFLAMMATION CASCADE
- •TOBACCO CESSATION PROGRAMS
 - -MULTIMODALITY APPROACH (~10—20% WORKFORCE)
 - -KNOWLEDGE BASED APPROACH
 - •ASBESTOS WORKERS: CANCER RISK IS 50 TO 100X GREATER IN TOBACCO USERS THAN NON-USERS
- MEDICAL MONITORING

MEDICAL MONITORING DONE AT FDNY - BHS

- •IMPORTANCE OF EXISTING INFRASTRUCTURE
 - -FDNY vs. OTHER WORKFORCES
- RESOURCES
 - -OPERATIONAL EXPERTISE
 - -PAST COMMITMENT
 - -CREDIBILITY
 - -PRE-EXPOSURE DATA
 - **-WORKER EXPOSURE TO RESEARCH**
 - HYPOTHESIS & BENEFIT DRIVEN

MEDICAL MONITORING FDNY GROUPED BY EXPOSURE

- CRUCIAL TO VALIDATE EXPOSURE
 - DENOMINATOR MUST NOT OVEREMPHASIZE
 - FIRE vs. OTHER WORKFORCES
- 1. DURING COLLAPSE (initial dust clouds)
- 2. AFTER COLLAPSE -- DAY 1 & 2
- 3. AFTER COLLAPSE -- DAY 3 through 7
- 4. LITTLE OR NO EXPOSURE (<500 firefighters)

MEDICAL MONITORING DONE AT FDNY - BHS

- •COMPUTER HEALTHCARE QUESTIONNARE

 -EXPOSURE VALIDATION
- CHEST X-RAY & SPIROMETRY
- AUDIOGRAM
- SMA23 & CBC (LIVER, KIDNEY, BM, etc)
- EKG
- •HEPATITIS SCREENING

SPECIALIZED EXPOSURE TESTS AT BHS

- HEAVY METALS
 - **-URINE MERCURY**
 - **-URINE BERYLLIUM**
 - -SERUM LEAD
 - -CADMIUM
- PCB's & DIOXINS
- HYDROCARBONS.

SPECIALIZED PULMONARY TESTING

- METHACHOLNE CHALLENGE AT BHS
 - -100 FIREFIGHTERS DONE @ 4 WK POST
 - -25% HYPERREACTIVE (PC20 < 16)
 - -SIGNIFICANT GREATER HYPERREACTIVITY IN GRP1 THAN GRP 2 (PC20 < 8)
 - -FOLLOW UP CHALLENGE @ 8 WK POST
- •BRONCHOSCOPY (N=1)
- •HIGH RESOLUTION CAT SCAN

NYC FIRE DEPARTMENT BHS COMMITMENT

- •BLOOD & URINE TOX. STILL PENDING
 - -WE HAVE STARTED TO TEST ALL EXPOSED FIREFIGHTERS AND EMS PERSONNEL
 - NOT JUST A STATISTICAL SAMPLE
 - **-BLOOD STORED FOR FUTURE QUESTIONS**
 - -CONTINUED FOLLOWUP AT ANNUALS
 - -INTERVENTION & STUDY
 - <u>NOT</u> JUST REGISTRY & MONITORING

How many days have you worked at WTC?

	COUNT	Percent
Have NOT worked at WTC	3	0
Have worked at WTC for a TOTAL of 1 to 7 days	465	47
Have worked at WTC for a TOTAL of 8 to 14 days	380	38
Have worked at WTC for a TOTAL of 15 to 21 days	106	11
Have worked at WTC for a TOTAL of 22 to 28 days	21	2
Have worked at WTC for a TOTAL of more than 4 wk	15	2
TOTAL	1010	

What activities were you doing on day 1 (9/11)?

	COUNT	Percent
Not Present at WTC	456	18
Digging at WTC	657	2 6
Fire Suppression at WTC	460	18
Rescue/Recovery at WTC	699	28
Welding or Steel Cutting at WTC	107	4
Direct Supervision at WTC	159	6

On day 1 when working, mask type worn & frequency

	COUNT	Percent
CFRD Surgical Mask N95 (check below for freq)	106	14
Dust or Paint Mask (hardware store type)	515	7 0
Half-face Respirator given for use at wtc (check below for freq).	53	7
SCBA during collapse	24	4
SCBA at other times (check below for freq)	35	5
Mask MOSTLY used during work time	209	18
Mask RARELY used during work time	302	26
Not Present or NO Mask Worn when present	647	56
TOTAL	1158	

Prior to WTC, did you commonly suffer from:

	COUNT	Percent
NONE OF BELOW	1274	85
Daily Cough	46	3
Nasal Congestion or Drip	71	5
Sore or Hoarse Throat	35	2
Wheeze	21	1
Shortness of Breath	29	2

After the WTC, do you commonly suffer from:

	Percent	
Daily Cough	35	
Sore or Hoarse Throat	64	
Wheeze	20	
Shortness of Breath	13	
GI Upset or Heartburn	<u> </u>	

Firefighters battle 'Trade Center cough'

- REAL & EXPECTED CONSEQUENCE
- PREVENTABLE & TREATABLE
- CHRONIC EFFECTS:
- TREATMENT GOAL IS TO PREVENT:
 - CHRONIC COUGH SYNDROME
 - ASTHMA & COPD

FDNY—BHS WTC INTERVENTIONS & STUDIES:

2. MEDICAL MONITORING DATA

- INJURIES & ILLNESS
 - Ex. CHANGES IN PULMONARY STATUS & FUNCTION

3. STRESS RELATED ISSUES

- PROVIDE COUNSELING SERVICES
- EXPERT PANEL FOR REVIEW & STUDY
 - NON-SERVICE PROVIDERS
 - NIOSH, VA, OKLAHOMA TEAM, RUTGERS

